

OUR BOOK SHELF

Studies from the Laboratory of Physiological Chemistry of the Sheffield Scientific School of Yale College for 1884-85. Edited by Prof. R. H. Chittenden, Ph.D. (New Haven, 1885.)

THIS volume of some 200 pages is a reprint from volumes vi. and vii. of the *Transactions* of the Connecticut Academy, which were published between March and November of 1885. It contains eleven more or less important physiological memoirs, the result of work done in the Sheffield Scientific School of Yale College by Prof. Chittenden and his colleagues. The first memoir investigates the diastatic action of saliva as modified by various conditions, studied quantitatively, the joint author being Dr. Herbert Smith. The second is on the amylotic action of diastase of malt as modified by various conditions studied quantitatively, the joint author being Dr. Cummins. Diastase taken into the stomach must sooner or later be completely destroyed by either the free acid or the large percentage of acid proteids; but in the first stage of digestion, in the absence of free acids and under the protecting influence of proteid matter, the conversion of starch into sugar may still go on, though soon destined to feel the effects of the gradually increasing percentage of combined acid. The third memoir is by the Editor and Dr. Painter, on the influence of certain therapeutic and toxic agents on the amylotic action of saliva. The substances selected for study, besides those noted for therapeutic or toxic power, were also those possessed of antiseptic properties. Mercuric chloride, which acts so powerfully as a germicide, acts even more energetically on the organised ferment of saliva. It is interesting to find that air, oxygen, and carbonic acid all stimulate the amylotic ferment, and this approximately in proportion to the extent in which they are present in the natural secretion; while of the reducing gases, hydrogen retards and hydrogen sulphate stimulates. In a fourth memoir, by the Editor and S. E. Allen, the subject is the influence of various inorganic and alkaloid salts on the proteolytic action of pepsin-hydrochloric acid. In this the comparative influence on gastric digestion of various metallic salts well known as poisons or therapeutic agents has been studied, and some experiments on some alkaloid salts are added. The subject of the influence of temperature on the relative amylotic action of saliva and the diastase of malt is treated of by the Editor and Dr. W. E. Martin. The influence of various therapeutic and toxic substances on the proteolytic action of the pancreatic ferment, and on the influence of bile, bile salts, and bile acids on amylotic and proteolytic action are investigated in two memoirs by the Editor and Dr. Cummins. There is a very interesting, and, from a medico-legal point of view, important memoir on the absorption of arsenic by the brain tissues, by the Editor and Dr. Herbert E. Smith. Two memoirs on the influence of potassium and ammonium bromides, and on cinchonidine sulphate on metabolism, are by the Editor and Dr. W. Culbert, and the Editor and Dr. Henry Whitehouse; while a memoir on the *post-mortem* formation of sugar in the liver in the presence of peptones, by the Editor and Dr. Alex. Lambert, concludes a volume which in many ways reflects great credit on the work done at Yale College, and shows an intimate knowledge of the labours in the same direction of the authors' fellow-workmen in Europe.

Catalogue of the Lizards in the British Museum (Natural History). 2nd Edition. By George Albert Boulenger. Vol. II.

THE rapid progress made with this important Catalogue shows an amount of energy on which the authorities of

the British Museum and herpetologists generally may be congratulated. The first volume appeared early in 1885, and was noticed in NATURE for May 21 (vol. xxxii. p. 49); the second volume was issued before the conclusion of the year.

This volume contains the following families of lizards: Iguanidæ, with 293 species; Xenosauridæ, with 1; Zonuridæ, 14; Anguidæ, 44; Anniellidæ, 2; Helodermatidæ, 3; Varanidæ, 27; Xantusiidæ, 4; Teiidæ, 108; and Amphisbænidæ, 65; or a total of 561 species, distributed amongst 115 genera. The number of species is consequently rather greater than in the first volume, which contained descriptions of 490. In the present as in the preceding volume several genera proposed by previous writers are united into larger generic groups: thus in the Varanidæ only one genus, Varanus, is recognised in place of the seven into which the family was divided in Dr. Gray's Catalogue of 1845. Five new genera are proposed—three in the Iguanidæ and two in the Teiidæ. The construction of one of the names proposed, Enyaliodes, is, however, unfortunate, as the termination, that of an adjective, is objected to by many naturalists, and there is consequently the risk of another term being proposed.

Nearly all the Iguanidæ and all the Teiidæ are American, and as these two families contain between them 401 species out of the total number described in the volume there is a great preponderance of types peculiar to the New World. Two of the exceptions to the prevailing American distribution in the case of the Iguanidæ, the genera Chalarodon and Hoplurus, are peculiar to Madagascar, although no species of the family has been discovered in Africa.

The lithographic plates attached to both this and the previous volume are excellent, and the figures of lizards, even if not quite so life-like as the highly artistic drawings of the late Mr. Ford, are far superior to the illustrations usually found in works on Reptilia. W. T. B.

Physikalische Krystallographie und Einleitung in die krystallographische Kenntniss der wichtigeren Substanzen. Von P. Groth. 2nd Edition. (Leipzig: Wilhelm Engelmann, 1885.)

THIS is the most satisfactory work of its kind which has been published in any language. In a very simple way the chemist is made to comprehend the mysteries of geometrical crystallography, the physicist is taught how intimately optical and other physical characters are related to crystalline form, while to the microscopical petrographer is presented a careful explanation of the principles upon which all his determinations must be based. We are glad to see that in this edition the simple notation of the late Prof. Miller, of Cambridge, reigns almost supreme; doubtless, it will soon succeed in driving its unpronounceable rivals completely from the field, to the relief of every student. Stereographic projection too takes a very prominent place. In the present edition the work has been increased by 180 pages, most of which are given to the chapter descriptive of the instruments: there are as many as 631 woodcuts. We wish this edition all the success it deserves.

The Rudiments of Mineralogy. By Alexander Ramsay, F.G.S., &c. Third Edition. (London: Crosby Lockwood & Co., 1885.)

MR. RAMSAY is far from being a master of his subject. We cannot imagine what advantage the elementary student, for whom the book is intended, can derive from information as to the specific gravity of each species relative to hydrogen: in the case of native silver, for example, he is told that the specific gravity ranges from 115,123 to 117,369! And in any case what is

the experimental value of the last three or four figures? The specific gravity of each species relative to water is given as usual, so that the reference to hydrogen is only an additional torment for the learner. We doubt too the wisdom of explaining specific and atomic heats, and giving lists of their values. Isomorphism and pseudomorphism are hopelessly confused and interchanged on p. 20, while the illustrative formula is quite unintelligible. The adjusting apparatus of the ungraduated goniometer is, as usual in text-books, wrongly disposed for use. We have noticed several mistakes of fact and errors of printing; but the book is neat in style, and perhaps will not do much harm.

The Prospector's Handbook. By J. W. Anderson, M.A., F.R.G.S. 8vo, pp. 132. (London: Crosby Lockwood and Co., 1886.)

THE author, after traversing the mineral fields of New Zealand, New Caledonia, New Mexico, and Colorado, feels convinced that some simple guide or handbook for the use of prospectors as well as travellers is a desideratum, and the present volume is the outcome of this conviction. It contains a number of notes or paragraphs upon subjects incidental to metallic mining, which are distributed into chapters under the different heads of prospecting, rocks, blowpipe-testing, character of minerals, metals, and metallic ores, other useful minerals and ores, composition of various rocks, testing by the wet process, assay of ores, and surveying; to which are added an appendix of tables and a glossary of terms. As the whole text is contained in rather more than a hundred pages, not very closely printed, it will be easily understood that no one of the numerous subjects included in the author's programme is very thoroughly treated. The best part of the book is the introductory chapter on prospecting, which contains some useful generalisations on mineral deposits and the search for them, which, however, are more likely to be of use to the "tender-foot" than to the prospector properly so called. It would seem, however, that this is what the author has in contemplation, as, from some remarks on p. 9, he appears to consider prospectors and miners as two different classes of men, and evidently has no very favourable opinion of the latter. Our own experience points in the opposite direction and leads us to regard typical prospectors as representing the highest and most intelligent class of operative miners. Unfortunately it is difficult to keep them on regular mining works except during the winter time, when the mountain regions are inaccessible.

The remainder of the book is of very little value. The descriptions of minerals are short, without being clear, and in many cases far from accurate. Thus, the composition of galena is stated to be "80 per cent. of lead, the rest sulphur"; malachite is said to contain 70 per cent. of copper, and silicate of zinc about 67 per cent. of zinc. All of these statements are incorrect, and it is not easy to see why they have been made, as no more space would have been required to give the composition corresponding to the theoretical constitution.

The sections on assaying and analysis are not likely to be required by the prospector in the field, and are too vague to be of much use to sedentary students. A description of the methods adopted in sampling gold and silver-bearing vein-stuff in the Western States and Territories of America would have been of interest, but we find no notice of this or any analogous practice followed elsewhere.

The glossary at the end contains several curious definitions, many of which, however, are reproduced from previously published works. The description of the term "tribute" more properly applies to dues or royalty rents as understood in this country. It may be that the author's definition applies to some local foreign usage, but this is not stated.

H. B.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

Hereditary Stature

PERMIT me to correct one word in my memoir on "Hereditary Stature" in the last number of NATURE (p. 297, col. 1, line 6 from bottom), which should read "seven" on an average. I should be glad at the same time to amplify the passage in which it occurs, as follows:—

The chance that the stature of the son will at least rival the stature of the father, is not uniform; it varies with the height of the father. When he is of mediocre stature, that is, 5 feet 8½ inches, out of every 100 sons born to a group of fathers of that height, 50 will be taller and 50 will be shorter than their fathers (the practically impossible case of absolute equality being neglected). Here then the chance of which we are speaking = 50 per cent. When the father is tall, the chance in question diminishes; when he is very tall, say 6 feet 5 inches, the chance is reduced to seven per thousand. The following table shows the probabilities in various cases. Columns A contain the height of the fathers, Columns B show how many per cent. of the sons will rival or surpass the height of their fathers:—

A		B		A		B		A		B	
ft.	in.	per cent.		ft.	in.	per cent.		ft.	in.	per cent.	
5	8½	50		6	0	15		6	4	14	
5	9	42		6	1	9		6	5	07	
5	10	31		6	2	5		6	6	03	
5	11	22		6	3	3					

FRANCIS GALTON

Deposits of the Nile Delta

TWO communications from Sir William Dawson, published in NATURE of January 7 and 28 (pp. 221, 298), appear to call for a short notice from me. The report on the above subject which I read before the Royal Society on November 19, 1885, and of which an abstract appeared in NATURE of December 10, ought not to be referred to as "the report of the Delta Committee of the Royal Society." The origin of this report was as follows:—As there was no other geological laboratory available for the examination of the samples of delta-deposits sent home by Col. Maitland than the one connected with the Normal School of Science and Royal School of Mines, the other members of the Delta Committee requested me to undertake the microscopical and chemical investigation of the specimens. In preparing my report on them I was struck by the remarkable and unexpected characters which they presented, and I ventured to suggest a mode of accounting for them. When my report was submitted to the Committee I was requested to lay it before the Society; and, it would seem quite superfluous to add, neither the Committee nor the Society thereby accepted any responsibility for the views which I expressed in the report.

As Sir William Dawson lies under a manifest disadvantage in attempting to criticise a report which he has not seen, it will not be necessary to enter at length upon the subject of his communications. If I understand the first of these aright, he takes the opportunity in it of withdrawing his untenable assertion that "at a depth of 30 or 40 feet the alluvial mud rests on desert sand" in favour of the *totally different* statement that "the modern Nile mud" lies on "a Pleistocene or Isthmian deposit." In the absence of any palaeontological evidence I can offer no opinion as to the truth of this latter view; but it is certain that the deposits above and below the limit mentioned are of precisely similar mineral characters. With respect to the second communication, I need only add that when its author has the opportunity of reading the report in question, he will find that the very obvious considerations to which he refers have been by no means lost sight of.

JOHN W. JUDD

Stone Implements and Changes of Level in the Nile Basin

I INCLOSE a letter from my brother at Wady Halfa. The scrapers sent home are all made out of flat oval pebbles of